

Process and Summary results of Ghana's BTRI to UNFCCC



Outline

- Process of Preparing Ghana's 1st BTR
- Ghana's historical GHG emissions profile
- GHG emission projections
- NDC mitigation targets
- Policies to achieve NDC targets
- Progress toward NDC target
- Role of cooperative approach in NDC
- Lessons

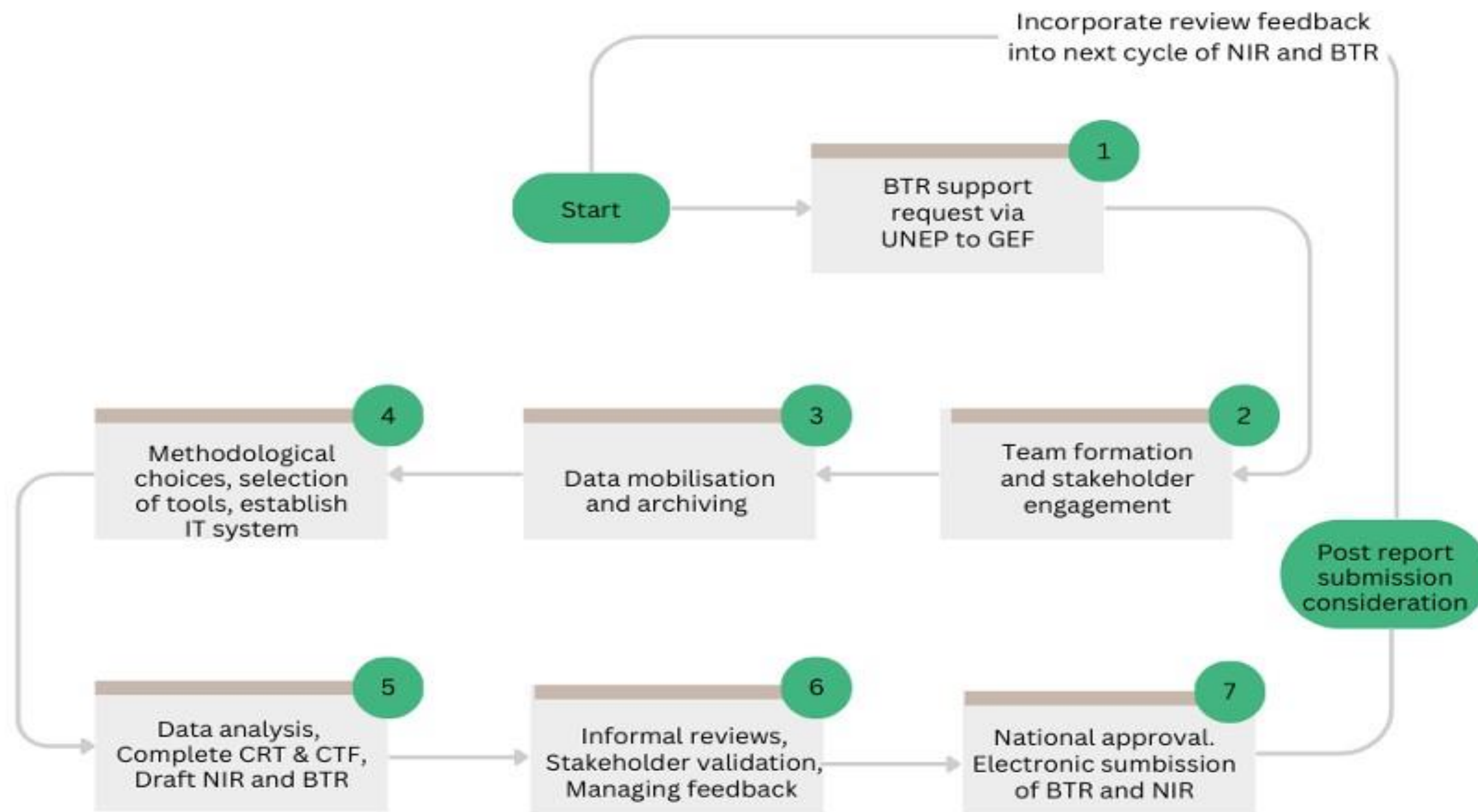
Ghana's BTR Preparation Processes

- BTR 1 took its roots from the functionality of the GCARP
- Support and collaboration local and international partners, underscoring the Government's commitment to effective climate action
- Comprehensive and participatory process, drawing on the best available national data grounded in scientific principles

- Effort took approximately 18 months
- Initial concept to mobilising resources for its development.
- Provides up-to-date information based on the insights from the BUR4.
- Funding from the GEF via the United Nations Environment Programme (UNEP)- fruitful partnership for sustainable development

- GEF's support activated the GCARP
- Setting up an oriented working team
- Stakeholder engagement and data mobilization
- Technical analysis
- Drafting the NIR and BTR document and
- Compiling the reporting tables using the UNFCCC ETF

- Draft NIR, BTR, and accompanying tables underwent independent informal reviews and stakeholder validation workshops.
- Biennial Transparency Report (Article 13 of Paris Agreement) [BTR]
- Comments from the informal review and stakeholder validation workshop were addressed to the extent possible
- MEST approval of NID and BTR1 prior to electronic submission



Domesticating UNFCCC on climate action in Ghana

Established national institutions

- UNFCCC NFP
- REDD+ Focal Point
- GCF NDA, GEF Focal Point
- Adaptation Fund Focal point
- Technology NDA
- Article 6 DNAA
- Thematic (NAPs) and sector contact points

Adopted climate policies and laws

- Act 1124, 2025
- National climate change policy
- Nationally determined contributions
- National energy transition framework
- National electric vehicle policy
- National REDD+ strategy
- National Adaptation Planning
- Sustainable finance framework

International Reporting Obligations

- National Communications [NC] (Article 12 of UNFCCC)
- Biennial Transparency Report (Article 13 of Paris Agreement) [BTR]
- National greenhouse gas inventory report [NIR]
- Initial report, annual information, regulation information
- REDD+ FREL

Mandate for National GHG Emissions

Section 149 of Act
1124, 2025 mandates
EPA to coordinate
international
climate reporting
UNFCCC

Article 12 of
UNFCCC and Article
13 of Paris
Agreement

NC - 4 years
BTR - 2 years
NIR - 2 years
Initial report
Annual
information

6 NIRs
5 NCs
1 BTR
1 initial report

National greenhouse gas inventory

- National Inventory document
- Common reporting tables
- Article 13 of Paris Agreement
- Modalities, Procedures & Guidelines [Report frequency, elements, format, reviews]
- Methodology
- Calculation and reporting software

GHG inventory approach

Methodology

- IPCC 2006 guidelines and 2019 refinement
- IPCC software
- Customised national calculation sheets
- UNFCCC reporting tools

Economic sectors

- Energy
- Transport
- Industry process
- Agriculture
- Forestry and land use
- Waste

Gases

- Carbon dioxide
- Methane
- Nitrous oxide
- PFC, HFC, SF6
- NF3

Timeline

- Base year : 1990
- Latest year: 2022
- Report year: 2024
- Projection year: 2040

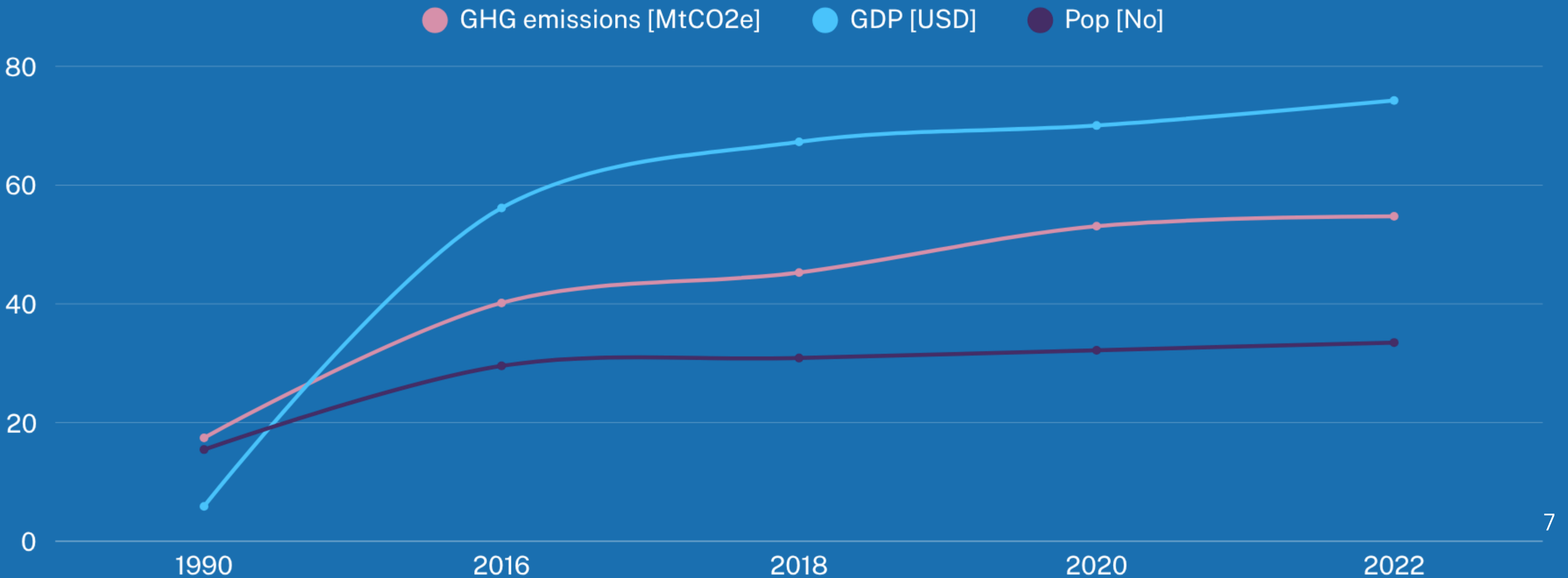
Global Warming Potential

- Express mass unit to tCO₂e
- AR6
- 100 years
- 20 years

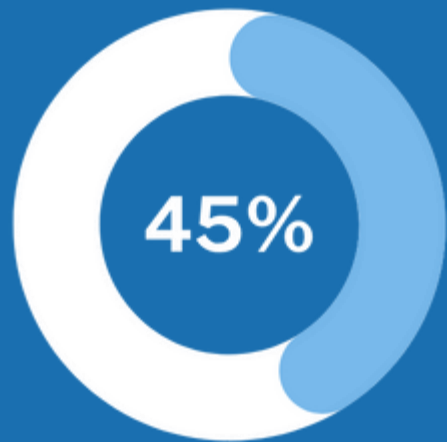
Reports

- NIR [NID + CRT]
- BTR
- NDC - FCTU
- FREL
- Initial report
- Annual information

Historical GHG emissions rise along side GDP & population

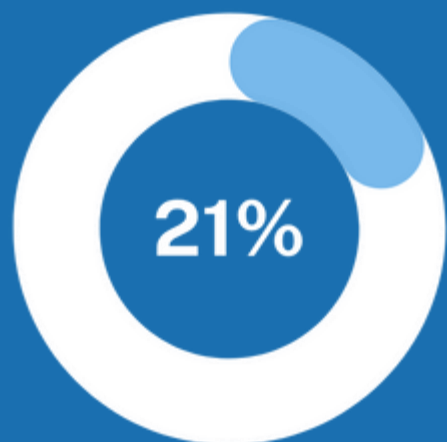


The energy sector is the leading GHG emissions source in Ghana followed by agriculture



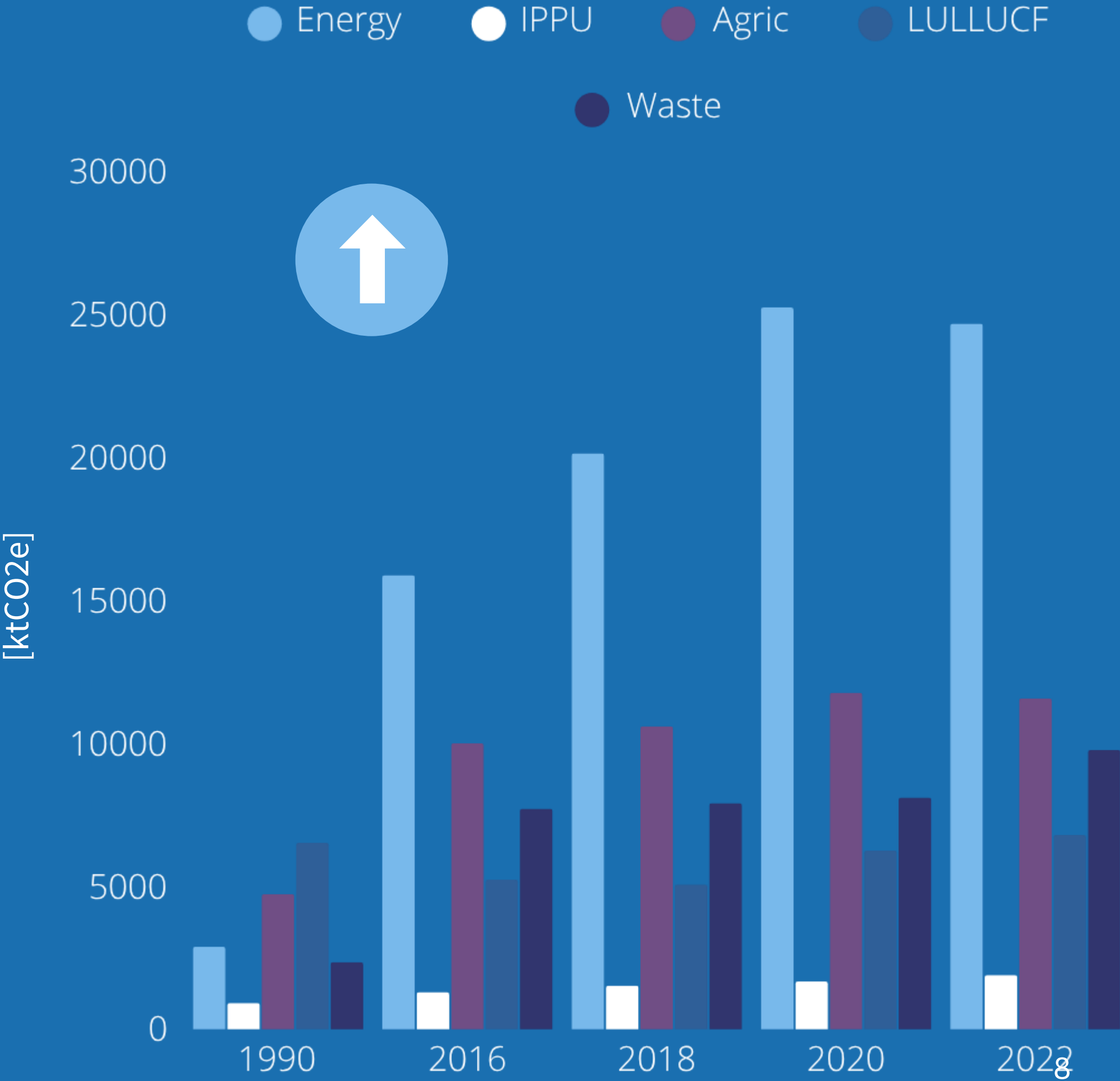
ENERGY SECTOR

Emission trend is driven by road transport, electricity generation, oil & gas, and households

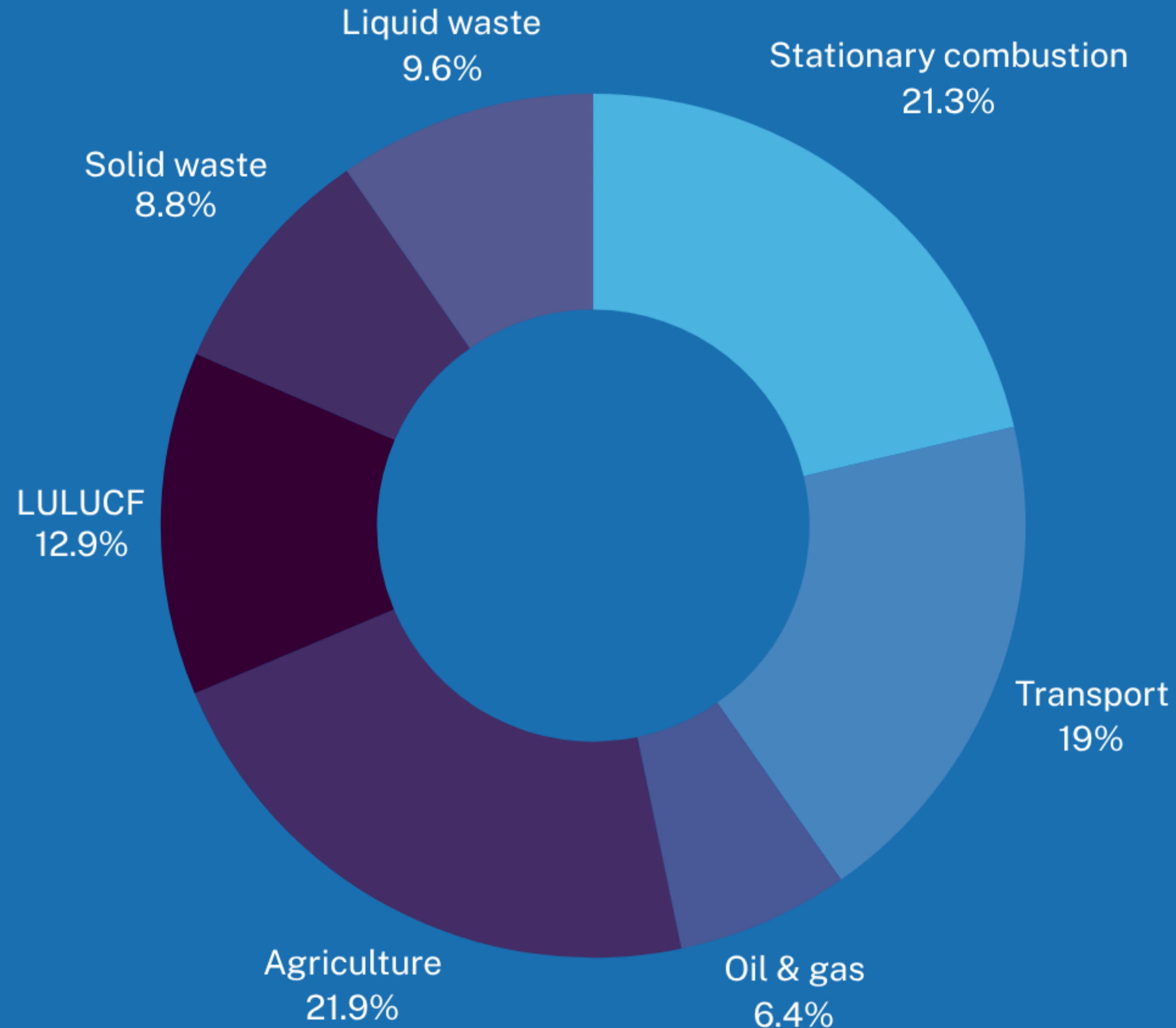


AGRICULTURE SECTOR

Influenced by livestock, rice cultivations, soil emissions and burning.



GHG emissions breakdown, 2022



**15%
SHARE**

ELECTRICITY GENERATION

Fuel oil and natural gas based electricity and heat generation

**19%
SHARE**

TRANSPORT

Road transport drive the emissions due to growing traffic and vehicle ownership

**10%
SHARE**

LIVESTOCK

Animal feeding, animal heads & type, manure management

**12%
SHARE**

LAND USE

Land use change instigated by forest-grassland-cropland transition, harvested wood products

Share of GHG emissions per gases, 2022

since 2016

+43%

CO2 EMISSIONS

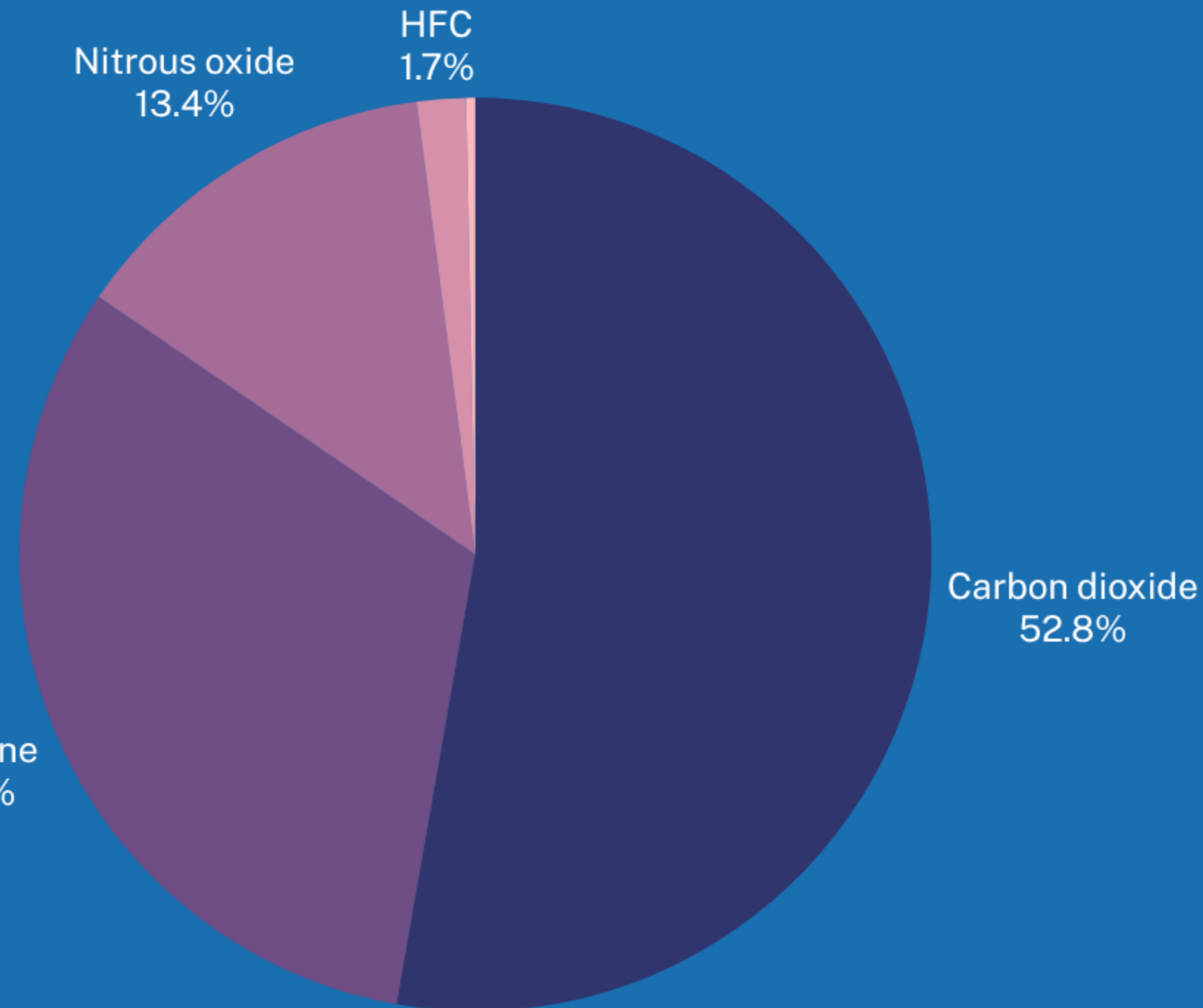
Energy [71%]
LULUCF [23.5%]
IPPU [2.7%]
Agric [0.1%]
Waste [2.7%]

CH4 EMISSIONS

Energy [22%]
Agric [30%]
Waste [47%]

N2O EMISSIONS

Energy [4%]
Agric [86%]
Waste [10%]



since 2016

HFC EMISSIONS

IPPU [100%]

+28%

PFC EMISSIONS

IPPU [100%]

+29%

SF6 EMISSIONS

IPPU [100%]

-15%

Top 10 key categories

ENERGY

Road Transportation - CO₂
Energy Industries - Gaseous Fuels - CO₂
Other Sectors - Biomass - CH₄

AGRIC

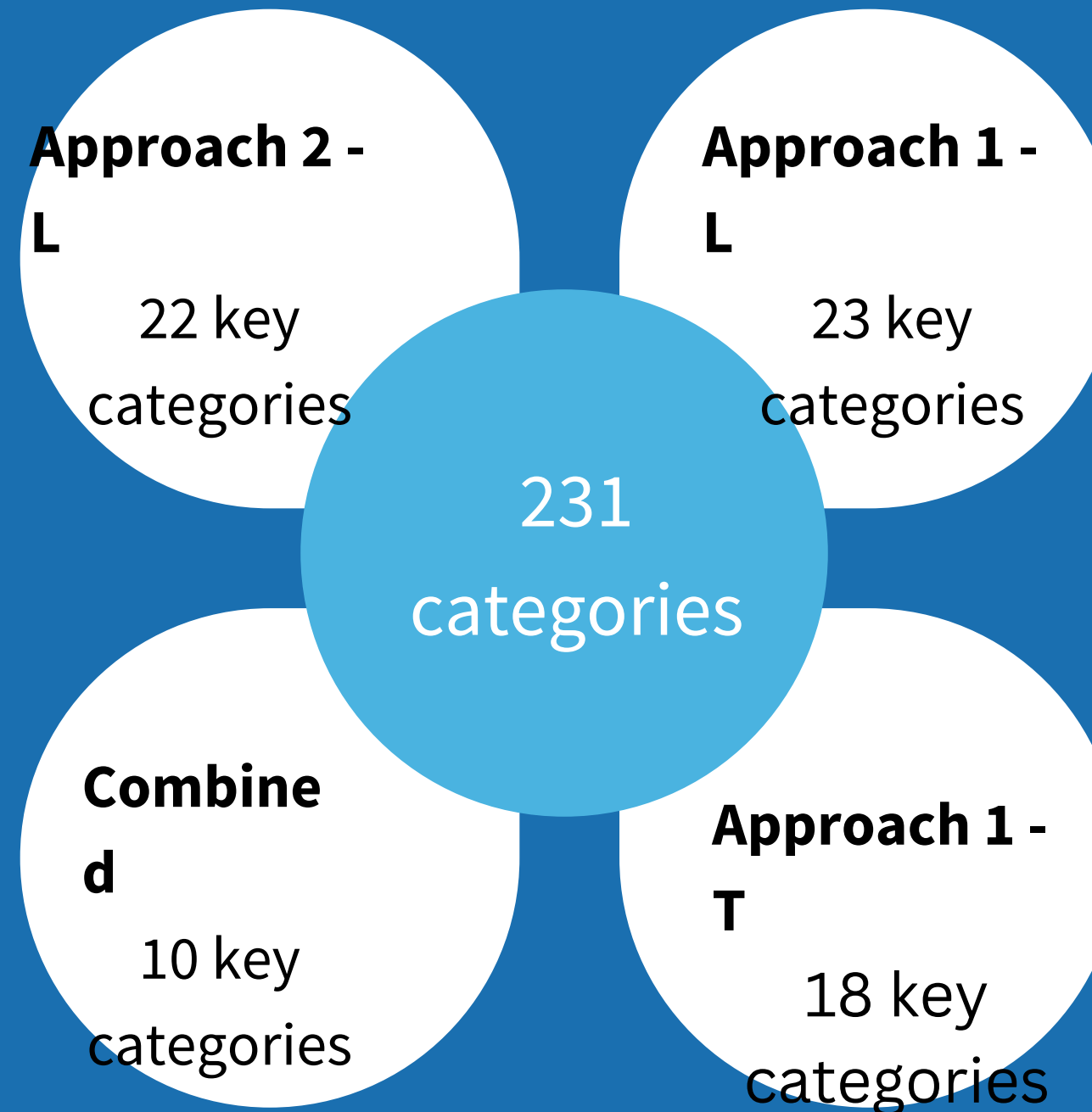
Manure Management - CH₄
N₂O Emissions from Managed Soils - N₂O
Rice Cultivation - CH₄

WASTE

Biological treatment of solid waste - CH₄
Wastewater Treatment and Discharge - Domestic - N₂O
Wastewater Treatment and Discharge - Industrial - CH₄

LAND

Grasslands - CO₂



GHG emissions projections

2022
base year

BASE YEAR
Latest GHG inventory figure
2022 - 54.6 MtCO₂e

2040
WM

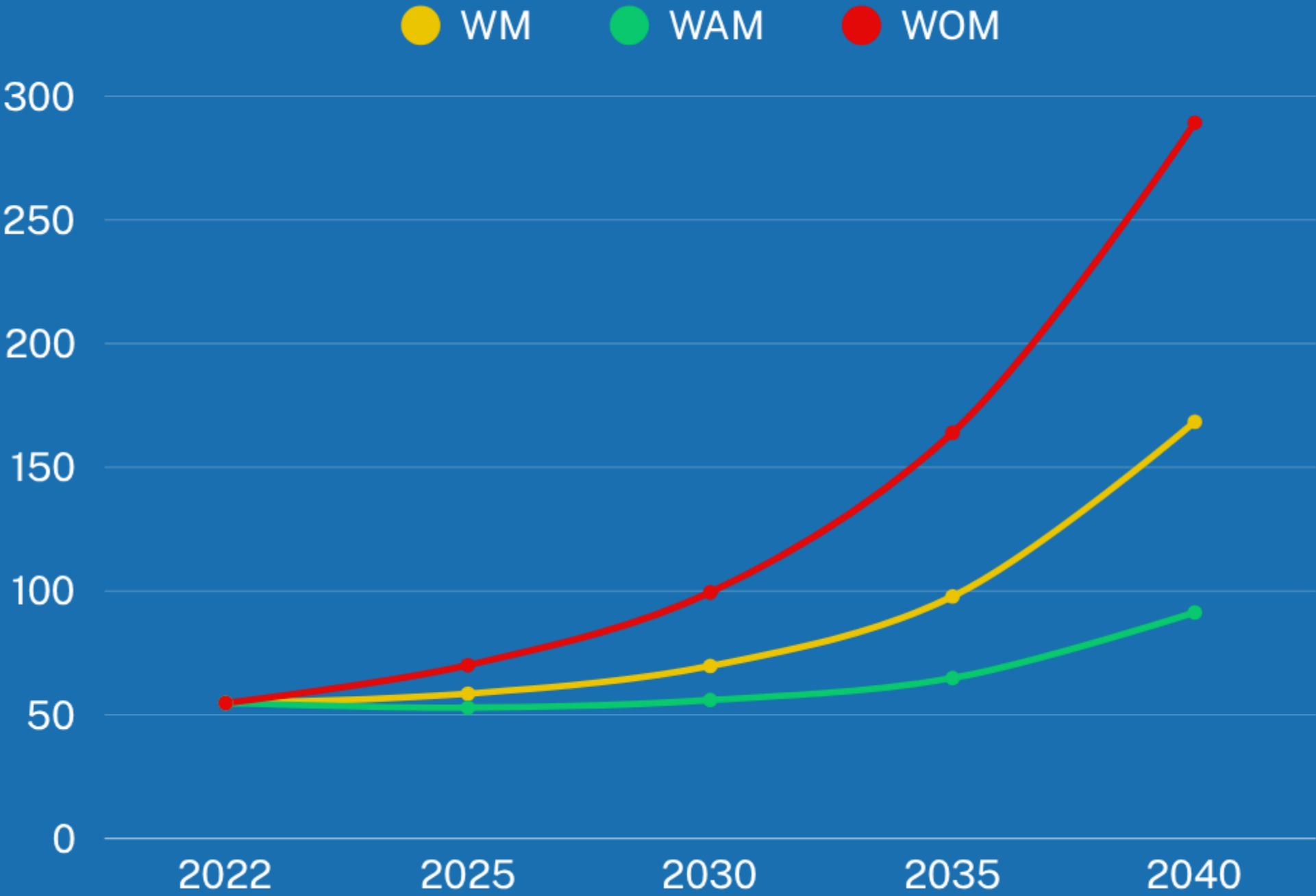
2040 - WM
Effect of implemented PAMs .
Support update NDC1 targets
16 PAMs

2040
WAM

2040 - WAM
Effect of implemented and planned PAMs
Additional to updated NDC1 ambition
26 PAMs [16 implemented + 10 planned]

2040
WOM

2040 - WOM
All 26 PAMs exluded



Total effects of PAM & projections

- WOM scenario - base year emissions increased by 428% by 2040
- WM scenario - base year emissions increased by 207% by 2040
- WAM scenario - base year emissions increase by 67% by 2040
- WOM vs WM - 42% potential emission reductions in 2040
- WOM vs WAM - 68% potential emission reductions in 2040

NDC GHG mitigation target



2030 TARGET

2019 base year
2-teir fixed-level type
Single year by 2030
Gases - CO₂, CH₄, N₂O, HFC
Sectors: Energy, Waste, LULUCF, IPPU
Indictor: net GHG reductions
Use of cooperative approach



2030 TIER 1 TARGET

Unconditional target
9 PAMs
Domestic measures



2030 TIER 2 TARGET

Conditional target
25 additional PAMs
International cooperation



Part of conditional target
achieved via Article 6

Tier 1 - unconditional target



9 PAM unconditional PAMs

Tier 2 - conditional target

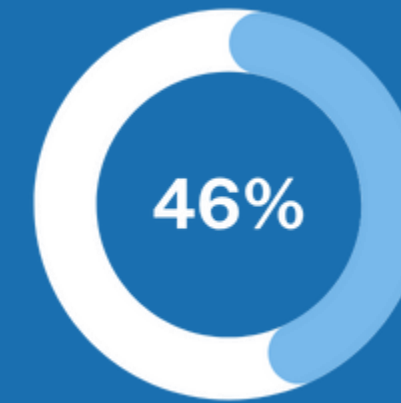


25 additional PAMs

Policies and measures that support NDC target



Technologies behind the PAMs



of all PAMs

12 PAMS REPORTED BY SECTOR

Energy [6]
Transport [2]
Forestry [2]
Waste [1]
IPPU [1]

CARBON PRICING

Article 6

ENERGY

Hi-tech cooking solutions
Low carbon electricity supply
RE technology
EE in homes and commerce

TRANSPORTS

Electric vehicles
Fleet renewal

FORESTRY

Result-based REDD+
Forest plantation

OIL & GAS

Natural gas recovery

IPPU

Green cooling

WASTE

Composting

Tracking NDC progress

Indicator: net GHG emission reductions

2019 value: -0

2019 tier 1 value: -0

2019 tier 2 value: -0

2022 value: -28.7 MtCO₂e

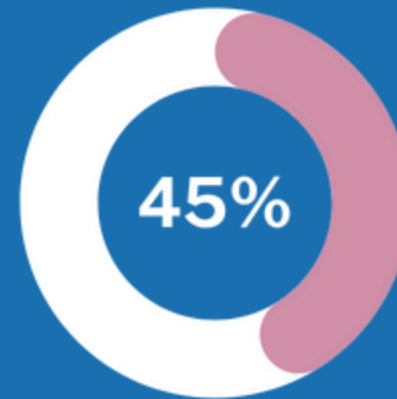
2022 tier 1 value: -15.5 MtCO₂e

2022 tier 2 value: -13.2 MtCO₂e

2030 target: -64 MtCO₂e

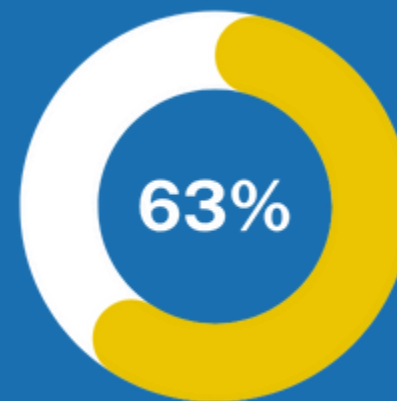
2030 tier 1 target: -24.6 MtCO₂e

2030 tier 2 target: - 39.4 MtCO₂e



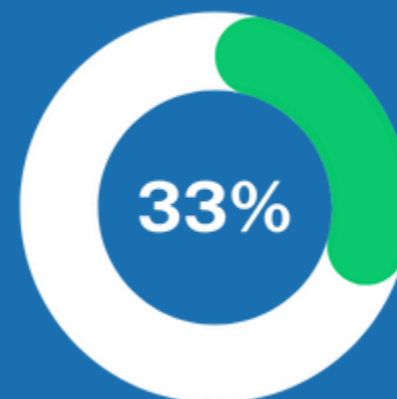
OVERALL NDC PROGRESS

Most recent value of indicator in 2022 : - 28.7 MtCO₂e
45% progress made toward 2030 target



TIER 1 NDC PROGRESS

Most recent value of indicator in 2022 : - 15.5 MtCO₂e
63% progress made toward 2030 target



TIER 2 NDC PROGRESS

Most recent value of indicator in 2022 : - 13.2 MtCO₂e
33% progress made toward 2030 target

Role of Article 6 in achieving tier 2 NDC target

Indicators	Value (MtCO2e)	Remarks
Tier 2 NDC target	-39.4	Additional mitigation outcomes to be achieved on condition of access to international support and carbon market
of which it is auhorisable under Article 6	-24	Minimum authorisable ITMO volumes for international transfer
Total ITMOs authorised	-5.9	ITMOs authorised from tier 2 conditional and outside NDC.
of which authorised within tier 2 NDC	-4.8	Authorised from compost and energy efficient cookstove projects under the Ghana-Switzerland cooperative approach
of which authorised outside NDC	-1.1	Authorised from sustainable rice cultivation under the Ghana-Swiss cooperative approach
Total ITMOs first transferred	+0	% of authorised ITMOs verified, positively examined, and issued ITMOs for the first transfer.
Total ITMOs CA applied	+0	Ghana applied CA to ITMOs used for the purpose it was authorised for transfer in annual emission balance.

Lessons Learnt

DEDICATED TEAM MEMBERS

- Continuous training of team member
- Define clear roles
- Plan BRT task 12 months head
- Coordinate GHG, NDC, BTR & Article 6 teams

DATA MANAGEMENT PORTAL

- 3-monthly data collection platform.
- Identification of new data sources,
- Continuous improvement of data quality.
- Focus on KCA.
- Aim to decentralise to facility level

TOOLS AND MODELS

- Calibrate projection tools to suit national circumstances
- Conduct sensitivity analysis of projections
- Link projections to NDC accounting
- Train experts on advance emission projections

MANAGEMENT

- Start project preparation immediately.
- Aim to apply funding for more than 1 reporting cycle.
- Explore additional funding source to support improvement plan.
- Make IT system relevant in data archiving, computation.

IMPROVE METHODOLOGY

- Prioritise KCA to improve methodology to higher tier
- Improvement list and capacity gap prioritise KCA
- Improve estimation of uncertainty assessment

JOINT REPORTING

- BRT, Article 6 initial report, and regulation information can be reported along side, where possible.
- Functional national system that serves GHGI, NDC, BTR and Article 6 report ensures consistency

DISSEMINATION

- Prepare summary results into policy brief.
- Disseminate key results and link to NDC preparation.
- Engage policy-makers on the findings and improvements

THANKS FOR LISTENING